ABSTRACT

AVIRIS Data Facility: Data Archiving, Calibration and Distribution System
for the Airborne Visible/Infrared imaging Spectrometer (AVIRIS)

Mikael Aronsson, Lisa Barge, R. Green, 1 lowell Johnson,
Justin McNeill, Martin Olah, Manuel Solis

AVIRIS is a calibrated optical sensor that measures images of upwelling spectral radiance through 224 spectral channels from 400 to 2500 nm at 10 nm intervals. Each channel is calibrated to better than 0.5 nm. Flown on NASA 1 ER-2 aircraft at 20 km altitude, AVIRIS gathers imaging spectrometer data at a spatial resolution of 20 m with 17 m sampling. AVIRIS data are used to identify, measure and map constituents of the Earth's surface and atmosphere based on the fundamental molecular absorption and constituent scattering characteristics resolved in the calibrated spectra. To achieve these goals and objectives all AVIRIS data must be processed by the AVIRIS Data Facility.

In this paper, we describe the architecture and data processing of the A\711<1S Data Facility, The Data Facility supports the following capabilities: (1) downloading of the high density flight tape; (2) decommutation and archiving of the flight data; (3) instrument housekeeping performance monitoring; (4) browse image distribution; (5) data calibration request processing; (6) instrument performance trend monitoring; (7) quality control and data distribution; (8) support to instrument engineering; (9) calibration file generation; and (10) Web page education and support to the community. Algorithm, software, and hardware components to fulfill these activities along with plans for future improvements to the AWNS Data Facility are presented.